

**ABSTRACT OF THE DISCLOSURE**

5 A technique is provided for the temporal interpolation of a projection data set acquired of a dynamic object, such as a heart. The projection data set is acquired using a slowly rotating gantry and a distributed X-ray source. The projection data may be interpolated at each view position to a selected instant of time, such as relative to a cardiac phase. The resulting interpolated projection data characterize the projection data at each view location at any instant in time. The set of interpolated projection data may then be reconstructed to generate images and/or volume with improved temporal resolution.